IN THE CLAIMS

1. (Previously Presented) A digital radiography imager, comprising:

a single energy detection layer; and

an x-ray converting layer disposed above the single energy detection layer, wherein the single energy detection layer is coupled to receive light from the x-ray converting layer, wherein the x-ray converting layer has a first surface adjacent to the single energy detection layer and a second surface on an opposite side to that of the first surface and wherein the digital radiography imager is configured such that x-rays traverse the single energy detection layer before propagating through the x-ray converting layer.

2. (Currently Amended) The digital radiography imager of claim 1, wherein an intensity level corresponding to the x-rays received by the imager is greater near the first surface relative to the second surface of the ~~single energy~~ x-ray converting layer.

3. (Original) The digital radiography imager of claim 2, wherein the x-ray converting layer comprises a scintillating material to produce visible light from x-rays.

4. (Previously Presented) The digital radiography imager of claim 3, wherein the single energy detection layer comprises photodiodes to detect the visible light.

5. (Original) The digital radiography imager of claim 2, wherein the x-ray converting layer comprises a semiconductor material to draw electrical charges across the semiconductor material.

6. (Currently Amended) The digital radiography imager of claim 2, wherein the x-ray converting layer comprises a photoconductor material to produce electrical charges across the ~~semiconductor~~ photoconductor material.

7. (Previously Presented) The digital radiography imager of claim 5, wherein the single energy detection layer comprises a plurality of charge-collection electrodes to collect the electrical charges.

8. (Previously Presented) The digital radiography imager of claim 1, further comprising a protective layer disposed below the single energy detection layer.

9. (Previously Presented) The digital radiography imager of claim 8, further comprising a substrate layer disposed between the single energy detection layer and the protective layer.

10. (Previously Presented) A flat panel imager, comprising:

a photodiode layer;

a light transparent layer disposed above the photodiode layer; and

a scintillator layer disposed above the light transparent layer,

wherein the scintillator layer has a first surface adjacent to the light transparent layer and a second surface on an opposite side to that of the first surface, and wherein the flat panel imager is configured such that x-rays traverse the photodiode layer before propagating through the scintillator layer.

11. (Original) The flat panel imager of claim 10, wherein a light intensity generated by the scintillator layer is greater near the first surface of the scintillator layer adjacent to the light transparent layer relative to the second surface of the scintillator layer.

12. (Original) The flat panel imager of claim 11, wherein the photodiode layer comprises a CCD-based sensor.

13. (Original) The flat panel imager of claim 11, wherein the photodiode layer comprises a CMOS-based sensor.

14. (Original) The flat panel imager of claim 11, further comprising a TFT layer disposed below the photodiode layer.

15. (Original) The flat panel imager of claim 10, wherein the scintillator layer comprises a phosphor scintillator.

16. (Original) The flat panel imager of claim 10, wherein the scintillator layer comprises a cesium iodide scintillator.

17. (Original) The flat panel imager of claim 10, wherein a mirror layer is disposed above the scintillator layer.

18. (Original) The flat panel imager of claim 17, wherein a protective layer is disposed below the photodiode layer.

19. (Original) The flat panel imager of claim 18, wherein a substrate layer is disposed between the protective layer and the photodiode layer.

20. (Original) The flat panel imager of claim 19, further comprising a casing that holds the flat panel imager together, wherein the casing forms an aperture window to receive x-rays.

21. (Canceled)

22. (Previously Presented) A flat panel imager, comprising:

a semiconductor layer disposed above a charge-collection layer; and

a bias electrode layer disposed above the semiconductor layer, the bias electrode to generate an electric field within the semiconductor layer, wherein the semiconductor layer has a first surface adjacent to the charge-collection layer and a second surface adjacent to the bias electrode, and wherein the flat panel imager is configured such that x-rays traverse the charge-collection layer before propagating through the semiconductor layer, wherein electric charges drawn across the semiconductor layer are greater near the first surface of the semiconductor layer adjacent to the charge-collection layer relative to the second surface of the semiconductor layer.

23. (Previously Presented) The flat panel imager of claim 22, further comprising a TFT matrix layer disposed below the charge-collection layer.

24. (Previously Presented) The flat panel imager of claim 22, wherein the semiconductor layer comprises an amorphous selenium material.

25. (Previously Presented) The flat panel imager of claim 22, wherein the charge-collection layer comprises a plurality of charge-collection electrodes.

26. (Original) The flat panel imager of claim 22, further comprising a casing that holds the flat panel imager together, wherein the casing forms an aperture window to receive x-rays.

27. (Previously Presented) A digital radiography system, comprising:

an x-ray source to transmit x-rays;

a flat panel imager to receive the x-rays and to produce a digitized image, comprising:

a photodiode layer;

a light transparent layer disposed above the photodiode layer;

a scintillator layer disposed above the light transparent layer; and

a mirror layer disposed above the scintillator layer; and

a display system connected to the flat panel imager, the display system to display the digitized image, wherein the scintillator layer has a first surface adjacent to the light transparent layer and a second surface adjacent to the mirror layer, and wherein the flat panel imager is configured such that x-rays traverse the photodiode layer before propagating through the scintillator layer.

28. (Original) The system of claim 27, wherein a light intensity generated by the scintillator layer is greater near the first surface of the scintillator layer adjacent to the light transparent layer relative to the second surface of the scintillator layer.

29. (Currently Amended) The system of claim 27, wherein the photodiode layer comprises a CCD-based sensor.

30. (Currently Amended) The system of claim 27, wherein the photodiode layer comprises a CMOS-based sensor.

31. (Currently Amended) The ~~flat panel imager~~ system of claim 27, further comprising a casing that holds the flat panel imager together, wherein the casing forms an aperture window to receive x-rays.

32. (Canceled)

33. (Previously Presented) The system of claim 36, wherein electric charges drawn across the semiconductor layer is greater near the first surface of the semiconductor layer adjacent to the charge-collection layer relative to the second surface.

34. (Previously Presented) The digital radiography system of claim 36, wherein the flat panel imager is a TFT-based imager.

35. (Previously Presented) The digital radiography system of claim 36, wherein the flat panel imager is a CCD-based imager.

36. (Previously Presented) A digital radiography system, comprising:

an x-ray source to transmit x-rays;

a flat panel imager to receive the x-rays and to produce a digitized image, comprising:

a semiconductor layer disposed above a charge-collection layer;

a bias electrode layer disposed above the semiconductor layer, the bias electrode to generate an electric field within the semiconductor layer; and

a casing that holds the flat panel imager together, wherein the casing forms an aperture window to receive the x-rays; and

a display system connected to the flat panel imager, the display system to display the digitized image, wherein the semiconductor layer has a first surface adjacent to the charge-collection layer and a second surface adjacent to the bias electrode, and wherein the flat panel imager is configured such that x-rays traverse the charge-collection layer before propagating through the semiconductor layer.

37. (Previously Presented) An imaging method, comprising:

transmitting x-rays through a single photosensitive device layer; and

receiving the x-rays incident on a scintillator layer after the transmission through the single photosensitive device layer.

38. (Previously Presented) The method of claim 37, wherein the scintillator layer is disposed above the single photosensitive layer, the scintillator layer having a first surface adjacent to the single photosensitive device layer and a second surface farther away from the single photosensitive device layer relative to the first surface, and wherein receiving further comprises receiving the x-rays at the first surface of the scintillator layer before the x-rays propagate through the scintillator layer.

39. (Previously Presented) The method of claim 38, wherein receiving further comprises generating a greater light intensity near the first surface of the scintillator layer adjacent to the single photosensitive device layer relative to the second surface of the scintillator layer.

40. (Previously Presented) The method of claim 39, further comprising detecting by the single photosensitive device layer visible light generated from the scintillator layer.

41. (Original) The method of claim 40, wherein a mirror layer is disposed adjacent to the second surface of the scintillator layer.

42. (Original) The method of claim 41, wherein a substrate layer is disposed below the photosensitive layer.

43. (Original) The method of claim 42, wherein a protective layer is disposed below the substrate layer.

44. (Previously Presented) An imaging method, comprising:

transmitting x-rays through a single charge collection-layer; and

receiving the x-rays incident on a semiconductor layer after the transmission through the single charge-collection layer.

45. (Previously Presented) The method of claim 44, wherein the semiconductor layer is disposed above the single charge-collection layer, the semiconductor layer having a first surface adjacent to the single charge-collection layer and a second surface farther away from the single charge-collection layer relative to the first surface, and wherein receiving further comprises receiving the x-rays at the first surface of the semiconductor layer before the x-rays propagate through the semiconductor layer.

46. (Previously Presented) The method of claim 45, further comprising generating an electrical field within the semiconductor layer.

47. (Previously Presented) The method of claim 46, wherein receiving further comprises generating a greater electrical charge near the first surface of the semiconductor layer adjacent to the single charge-collection layer relative to the second surface of the semiconductor layer.

48. (Previously Presented) The method of claim 47, further comprising detecting by the single charge-collection layer electrical charges drawn across the semiconductor layer.

49. (Original) The method of claim 48, wherein a mirror layer is disposed above the semiconductor layer.

50. (Previously Presented) The method of claim 49, wherein a protective layer is disposed below the single charge-collection layer.

51. (Previously Presented) A digital radiography imager, comprising:

an energy detection layer;

an x-ray converting layer coupled to the energy detection layer; and

a single energy detection/x-ray converting interface in the imager, wherein the x-ray converting layer has a first surface adjacent to the energy detection layer and a second surface on an opposite side to that of the first surface and wherein the digital radiography imager is configured such that x-rays traverse the energy detection layer and the single energy detection/x-ray converting interface before propagating through the x-ray converting layer.

52. (Previously Presented) A method, comprising:

receiving x-rays in a scintillator layer; and

transmitting the x-rays through a photosensitive device before the x-rays are received in any scintillator layer.

53. (Previously Presented) A digital radiography imager, comprising:

an energy detection layer; and

a substrate comprising an x-ray converting layer, the substrate coupled to the energy detection layer, wherein the energy detection layer is coupled to receive light from the x-ray converting layer, wherein the digital radiography imager is

configured such that x-rays traverse the energy detection layer before propagating through the substrate comprising the x-ray converting layer.

54. (Previously Presented) The digital radiography imager of claim 53, wherein the x-ray converting layer comprises a scintillating material to produce visible light from x-rays.

55. (Previously Presented) The digital radiography imager of claim 53, wherein the energy detection layer comprises photodiodes to detect the visible light.

56. (Previously Presented) The digital radiography imager of claim 53, wherein the x-ray converting layer comprises a semiconductor material to draw electrical charges across the semiconductor material.

57. (Previously Presented) The digital radiography imager of claim 53, wherein the x-ray converting layer comprises a photoconductor material to produce electrical charges across the semiconductor material.

58. (Previously Presented) The digital radiography imager of claim 53, wherein the energy detection layer comprises a plurality of charge-collection electrodes to collect the electrical charges.

59. (Previously Presented) A method, comprising:

providing a substrate;

receiving x-rays in an x-ray converting layer; and

transmitting the x-rays through an energy detection layer before the x-rays are received in the x-ray converting layer and before the x-rays are received in the substrate.

60. (Previously Presented) The method of claim 59, wherein the x-ray converting layer comprises the substrate.

61. (Previously Presented) The method of claim 60, wherein the x-ray converting layer further comprises a scintillating material to produce visible light from x-rays.

62. (Previously Presented) The method of claim 60, wherein the energy detection layer further comprises photodiodes to detect the visible light.

63. (Previously Presented) The method of claim 60, wherein the x-ray converting layer further comprises a semiconductor material to draw electrical charges across the semiconductor material.

64. (Previously Presented) The method of claim 60, wherein the x-ray converting layer further comprises a photoconductor material to produce electrical charges across the semiconductor material.

65. (Previously Presented) The method of claim 60, wherein the energy detection layer further comprises a plurality of charge-collection electrodes to collect the electrical charges.